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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,947	05/04/2005	Philippe Combette	271115US0PCT	9640

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LEVKOVICH, NATALIA A

ART UNIT	PAPER NUMBER
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1797

NOTIFICATION DATE	DELIVERY MODE
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08/20/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/533,947	Applicant(s) COMBETTE ET AL.	
	Examiner NATALIA LEVKOVICH	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,8-10 and 13-31 is/are pending in the application.
- 4a) Of the above claim(s) 15-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,8-10,13,14 and 26-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendments and remarks filed on 04/27/2009 have been acknowledged. Claims 3-7 have been canceled, claims 26-31 have been added, while claims 15-25 stay withdrawn from consideration.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 26-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In particular, the newly submitted claims 26-27 and 29-30 recite, respectively, blocking elements having cross-section(s) larger than the cross-section(s) of the wells, and the blocking elements with cross-section(s) larger

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than the cross-section(s) of the spaces between the wells. Upon further reviewing the original specification, Examiner found no support for these limitations, which, therefore, constitute a new matter. The original drawings are schematic and do not provide sufficient support for the features in question.

5. Claims 1-2, 8-10, 13-14 and 26-31 are rejected under 35 U.S.C. 112, second paragraph, as being unclear for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, as amended, recites column shaped blocking elements allowing beads of different diameters to be “*blocked and stacked* in interstices” between the blocking elements arranged to form wells configured to receive beads of a first preset diameter, and spaces between the wells configured to receive beads of a second preset diameter. It is unclear whether or not the height of the intended blocking elements must be at least two times the diameter of an imaginary circle(s) inscribed into the cross-section(s) of the wells and/ or inter-well spaces. See also claim 29.

The amended claim 10 recites the blocking elements having a height that “allows at least two second diameter beads to be stacked in the interstices between the blocking elements”. It is not clear whether or not the recited “interstices” are the same as the “spaces between the wells’ of claim 1. See also claim 28.

With respect to claims 26-31, the “traverse cross-section”, is unclear.

Claim Rejections - 35 USC § 102

6. Claims 1-2, 8-10, 13-14 and 26-31 are rejected under 35 U.S.C. 102(a) and (e) as anticipated by Yu et al. (US 20030091475).

With respect to claims 1-2, 26-27 and 29-30, Yu et al. disclose, as was discussed previously, a bead trapping device comprising a chamber [‘tank having a cavity’] formed by cap 78, seal 79 and substrate 70. The chamber further includes integrally formed posts 74 [‘blocking elements’] and inlets / outlets 77 [‘import / output means’]; the “posts being patterned to form cavities [‘wells’] between the posts, the cavities having a diameter between 0.5 microns and 200 microns”- (see Figure 7 and paragraphs [0002], [0003], [0005]). The cavities may form an irregular pattern. Figure 16 shows posts 164 forming cavities 165. The gap [‘interstice’, ‘space’] between the two posts arranged in the center appears to be different from the gap between the two posts arranged in the front, the latter defining the size of the beads to be blocked by cavity 165 [‘first preset diameter’]; the former defining the size of the beads which can be blocked between the two central posts [‘second preset diameter’]. Yu et al. also teaches that adjacent posts 164 may be connected to “form more complex shapes”-(see [0039]).

Referring to claims 8-9, Figure 3 shows posts of various cross sections, including those instantly recited.

Regarding claims 10, 28 and 31, Figures 14 A-B show the posts configured to allow beads of different diameters to be stacked in the interstices in-between.

With respect to claims 13-14, Yu discloses beads having both uniform and different sizes in [0029] and [0036]. As to the beads being functionalized differently or the same, the apparatus of Yu is configured for various biotechnological applications, such as DNA analysis, or drug screening (see above) which requires beads being functionalized in both fashions, depending on a particular goals of the testing.

Response to Arguments

7. Applicant's arguments filed 04/27/2009 have been fully considered but they are not persuasive, or moot in view of the new ground of rejection.

Applicant argues that "Yu's bead trapping device does not employ blocking elements which can block different diameter beads in the interstices between the blocking elements at preset locations in an ordered way. Yu's blocking elements are not distributed so as to obtain a positioning of the beads as a function of their diameters and to constitute wells intended to receive beads of a first preset diameter and spaces between the wells intended to receive beads of a second preset diameter". Examiner disagrees. The post patterns of Yu are clearly capable of blocking beads of different diameters (see, for example, Figure 16, showing posts arranged so as to form gaps of different sizes, each gap limiting the diameters of the beads to be retained, thus providing bead distribution as a function of the bead sizes). Regular patterns of posts are also

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capable of retaining beads having different sizes, since the distance between the posts defines ['presets'] only an upper limit for the bead diameters.

Applicant further argues that “the primary reason Yu's disclosure is deficient in describing all the features of Applicant's claimed invention is that Yu does not contemplate separating and trapping beads of two distinct diameters at preset locations in an ordered way. Yu's bead trapping device designed to trap uniformly sized bead”. Examiner would like to emphasize that the post patterns of Yu, both regular and irregular, are inherently capable of retaining beads of various diameters at preset locations in an order defined by a post pattern. See the discussion above.

Applicant further argues that “Yu's blocking elements do not block smaller diameter spherical beads in the interstices between the blocking elements at preset locations in an ordered way. Persons having ordinary skill in the art would have interpreted Yu's statement to mean that Yu's blocking elements are not distributed so as to obtain a precise positioning of the beads as a function of their diameters_and are not distributed so as to constitute wells intended to receive beads of a first preset diameter and spaces between the wells intended to receive beads of a second preset diameter”. Applicant also argues that “Irregular patterns of blocking elements cannot reasonably be expected to block smaller diameter spherical beads in the interstices between the blocking elements at preset location in an ordered way”. Examiner maintains that Yu does teach the posts ['blocking elements'] forming cavities ['wells'], as shown in the art rejection above, the wells and the spaces between the wells being capable to retain

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['position'] the beads precisely in the wells and/or between the wells as a function of the bead diameters, due to different intervals between the posts, and in the order defined by a post pattern.

Applicant further argues that “one advantage of this bead-trapping design is the way fluid is able to flow freely around the sides of the beadsThis is enhanced by minimizing the cross-sectional areas of the posts ...Needless to say, Yu teaches persons having ordinary skill in the art to minimize the cross-sectional areas of the blocking elements relative to the interstices between the blocking elements. Accordingly, Yu teaches away from blocking elements having traverse two- dimensional cross-sections larger than the traverse two-dimensional cross-sections of either the wells in the cavity or the spaces between the wells in the cavity”. Examiner notes that, first, “minimizing” is a relative term. Second, the ability of a fluid to flow freely around the beads is defined by many factors, mostly, by operating parameters (not having patentable weight in the claims to apparatus). Third, minimizing the post cross-sections does not preclude employing the structures having the instantly recited cross-sectional structure. Fourth, such structure is not supported by the original disclosure (see the rejection above). Finally, a disclosure of a preferred embodiment does not constitute “teaching away”.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Levkovich whose telephone number is 571-272-2462. The examiner can normally be reached on Mon-Fri, 2 p.m.-10 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797